

IN THE CLAIMS:

1. (Previously presented) A method comprising:

storing in a data structure information representing a plurality of clients on a network, the data structure including network addresses of the clients and network proximity measurements representing measured proximities between the clients and a plurality of content delivery agents;

dynamically and losslessly compressing the data structure based on the network addresses and the network proximity measurements in the data structure; and  
transmitting the data structure to a remote server configured to use the data structure to redirect content requests from the clients.

2. (Canceled)

3. (Original) A method as recited in claim 1, wherein said dynamically compressing the data structure based on the network proximity information comprises:

detecting when proximity measurements for at least two clients which share a network address prefix are within a predetermined range of each other; and

in response to the proximity measurements being within the predetermined range of each other for the at least two clients, merging entries for the at least two clients in the data structure.

4. (Previously presented) A method as recited in claim 1, further comprising losslessly decompressing the data structure.

5. (Original) A method as recited in claim 4, wherein said losslessly decompressing the data structure comprises splitting a merged entry in the data structure representing at least two clients into a plurality of separate entries.

6. (Original) A method as recited in claim 4, wherein said losslessly decompressing the data structure comprises decompressing the data structure in response to a detected change in network conditions.

7. (Canceled)

8. (Previously presented) A method as recited in claim 1, further comprising:  
generating an encoded value from each of the network addresses;

storing each of the encoded values in the data structure in association with a  
corresponding network address; and

modifying one or more of the encoded values to indicate entries in the data structure  
that have been merged.

9. (Canceled)

10. (Original) A method as recited in claim 9, wherein the method is performed in a  
content delivery agent configured to deliver content to the plurality of clients.

11. (Original) A method as recited in claim 9, wherein the method is performed in a  
request routing agent configured to route content requests from any of the plurality of clients.

12. (Original) A method as recited in claim 1, further comprising reporting information from the data structure to a request routing server.

13-32. (Canceled)

33. (Previously presented) A processing system comprising:

a processor;

a network communication device to enable the processing system to communicate with a plurality of clients over a network; and

a storage device containing instructions which, when executed by the processor, cause the processing system to perform a process that includes

creating a data structure that contains network addresses of the plurality of clients,

acquiring network proximity measurement information relating to the clients representing measured proximities between the clients and a plurality of content delivery agents, and

dynamically and losslessly compressing the data structure based on the network proximity measurement information and the network addresses of the plurality of clients.

34. (Canceled)

35. (Original) A processing system as recited in claim 34, wherein said dynamically compressing the data structure based on the network proximity information comprises:

detecting when proximity measurements for at least two clients which share a network address prefix are within a predetermined range of each other; and

in response to the proximity measurements being within the predetermined range of each other for the at least two clients, merging entries for the at least two clients in the data structure.

36. (Original) A processing system as recited in claim 35, wherein said process further comprises:

forming a mask to represent each of the network addresses;

storing the masks in the data structure; and

modifying one or more of the masks to indicate entries in the data structure that have been compressed.

37. (Original) A processing system as recited in claim 33, wherein the processing system comprises a content delivery agent configured to deliver content to any of the plurality of clients, and said process is performed by the content delivery agent.

38. (Original) A processing system as recited in claim 33, wherein the processing system comprises a request routing agent configured to route content requests from any of the plurality of clients, and said process is performed by the request routing agent.

39. (Original) A processing system as recited in claim 33, wherein said process further comprises reporting information from the data structure to a request routing server.

40. (Original) A processing system as recited in claim 33, wherein said process further comprises losslessly decompressing the data structure.

41. (Original) A processing system as recited in claim 40, wherein said losslessly decompressing the data structure comprises splitting a merged entry in the data structure representing at least two of the clients into a plurality of separate entries.

42. (Original) A processing system as recited in claim 40, wherein said losslessly decompressing the data structure comprises decompressing the data structure in response to a detected change in network conditions.

43-49. (Canceled)

50. (Previously presented) An apparatus comprising:

means for storing in a data structure information representing a plurality of clients on a network, the data structure including network addresses of the plurality of clients;

means for acquiring network proximity measurement information relating to the clients representing measured proximities between the clients and a plurality of content delivery agents; and

means for dynamically compressing the data structure based on the network proximity measurement information and the network addresses of the plurality of clients.

51. (Previously presented) A method comprising:

storing, in a data structure in a network agent, information representing a plurality of clients on a network, wherein the data structure includes a network address of each of the clients and network proximity information of each of the clients, the network proximity information representing measured proximities between the clients and a plurality of content delivery agents;

detecting when proximity measurements for at least two clients which share a network address prefix are within a predetermined time range of each other;

in response to detecting the proximity measurements being within the predetermined range of each other for the at least two clients, merging entries for the at least two clients in the data structure; and

transmitting the data structure from the network agent to a remote server configured to use the data structure to redirect content requests from the clients.

52. (Previously presented) A method as recited in claim 51, further comprising:

generating an encoded value from each of the network addresses;

storing each of the encoded values in the data structure in association with a corresponding network address; and

modifying one or more of the encoded values to indicate entries in the data structure that have been merged.

53. (Previously presented) A method comprising:

creating a first data structure in a content delivery agent associated with a plurality of clients, so that the data structure includes a separate entry for each of the clients;

storing in the entry for each client a network address of the client, each network address including a network address prefix;

generating a bitmap mask for each client based on the network address of each client;

storing the bitmap mask for each client in the corresponding entry in the first data structure;

repeatedly measuring a proximity between the agent and each of the plurality of clients;

storing the measured proximity for each client in the corresponding entry in the first data structure;

detecting when the measured proximities are within a predetermined range of each other for at least two clients which have the same network address prefix;

in response to the measured proximities being within the predetermined range of each other for the at least two clients, merging the entries for the at least two clients in the first data structure, including

using the network address of one of the entries being merged to represent both of the entries being merged, and

generating a single bitmap mask to represent the entries being merged as a logic OR of the individual bitmap masks of the entries being merged; and

for each of the entries in the first data structure, reporting the corresponding network address and bitmap mask to a request routing server.

54. (Previously presented). A method comprising:

receiving at a server, from a remote network agent, information relating to a plurality of clients on a network, the information including a plurality of network addresses and a corresponding plurality of masks, each of the network addresses representing one or more of the clients, at least one of the masks being indicative of compression of the corresponding received information for a corresponding two or more of the plurality of clients, said compression having been performed by the remote network agent based on network proximity measurements representing measured proximities between the plurality of clients and a plurality of content delivery agents;

storing the received information relating to the plurality of clients in a data structure; and  
using the data structure at the server to redirect content requests from the clients.

Please add the following new claims:

55. (New) A content delivery agent comprising:

a processor;

a network communication device to enable the processing system to communicate with a plurality of clients over a network; and

a storage device containing instructions which, when executed by the processor, cause the content delivery agent to perform a set of operations that includes

creating a first data structure in the content delivery agent associated with a plurality of clients, so that the data structure includes a separate entry for each of the clients;



storing in the entry for each client a network address of the client, each network address including a network address prefix;

generating a bitmap mask for each client based on the network address of each client;

storing the bitmap mask for each client in the corresponding entry in the first data structure;

repeatedly measuring a proximity between the agent and each of the plurality of clients;

storing the measured proximity for each client in the corresponding entry in the first data structure;

detecting when the measured proximities are within a predetermined range of each other for at least two clients which have the same network address prefix;

in response to the measured proximities being within the predetermined range of each other for the at least two clients, merging the entries for the at least two clients in the first data structure, including

using the network address of one of the entries being merged to represent both of the entries being merged, and

generating a single bitmap mask to represent the entries being merged as a logic OR of the individual bitmap masks of the entries being merged; and

for each of the entries in the first data structure, reporting the corresponding network address and bitmap mask to a request routing server.

56. (New) A content delivery agent comprising:

a processor;

means for creating a first data structure in the content delivery agent associated with a plurality of clients, so that the data structure includes a separate entry for each of the clients;

means for storing in the entry for each client a network address of the client, each network address including a network address prefix;

means for generating a bitmap mask for each client based on the network address of each client;

means for storing the bitmap mask for each client in the corresponding entry in the first data structure;

means for repeatedly measuring a proximity between the agent and each of the plurality of clients;

means for storing the measured proximity for each client in the corresponding entry in the first data structure;

means for detecting when the measured proximities are within a predetermined range of each other for at least two clients which have the same network address prefix;

means for responding to the measured proximities being within the predetermined range of each other for the at least two clients, by merging the entries for the at least two clients in the first data structure, including

means for using the network address of one of the entries being merged to represent both of the entries being merged, and

means for generating a single bitmap mask to represent the entries being merged as a logic OR of the individual bitmap masks of the entries being merged; and

means for reporting the corresponding network address and bitmap mask to a request routing server, for each of the entries in the first data structure.